

## Multidimensional Poverty in Africa

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### KEY FINDINGS

- **Over half (54%) of people in the African countries analysed suffer from multidimensional poverty:** 544 million people endure multidimensional poverty in 46 countries analysed in the region.
- Among 35 countries where changes to poverty over time were analysed, 30 of them have reduced poverty significantly. **Rwanda had stellar performance.**
- The MPI registered impressive reductions in some unexpected places. **19 sub-national regions – regional ‘runaway’ successes – have reduced poverty even faster than Rwanda.** The fastest MPI reduction was found in Likouala in the Republic of the Congo.
- **The Sahel and Sudanian Savanna Belt contains most of the world’s poorest sub-regions,** showing the interaction between poverty and harsh environmental conditions.
- **Poverty looks very different in different parts of the continent.** While in East Africa deprivations related to living standards contribute most to poverty, in West Africa child mortality and education are the biggest problems.
- The deprivations affecting the highest share of MPI poor people in Africa are **cooking fuel, electricity and sanitation.**
- **More people tend to suffer from MPI poverty than \$1.90/day poverty.** Yet nine important exceptions, where income poverty exceeds MPI, are in Africa. The number of people in multidimensional poverty in East Africa outnumbers those in West Africa, but we would not get similar conclusions if we only focus on income poverty.
- **East and West Africa have the largest number of poor people both in terms of income and multidimensional poverty.** North Africa is the least poor region.
- The number of poor people went down in only 12 countries. In 18 countries, although the incidence of MPI fell, **population growth** led to an overall rise in the number of poor people.

Drawing on rich datasets from national household surveys (DHS and MICS), the 2016 global Multidimensional Poverty Index (MPI) covers 46 countries in Africa,<sup>1</sup> which are home to just over 1 billion people.<sup>2</sup> Of these, 54% of the population, 544 million people, are multidimensionally poor.

### The MPI poorest region is East Africa

The least poor region is North Africa,<sup>3</sup> closely followed by Southern Africa. Interestingly the incidence of the MPI in Southern Africa is much higher than in North Africa (36% vs 8%), with poor people experiencing deprivation in 49% of dimensions on average in Southern Africa rather than 44% in North Africa.

The MPI is useful because it combines the incidence and intensity of poverty together. The incidence and intensity of MPI is highest in East Africa. While the intensity of poverty is higher in West Africa than in Central Africa, the latter shows larger incidence of poverty than the former. So if we sort regions in Africa by their MPI, the poorest region is East Africa, followed by Central and West Africa. If we look at where the highest number of poor people live, we find that 90% of MPI poor people in Africa live in East, Central, or West Africa.

**Disaggregated MPI results** are available for 475 sub-national regions in 41 countries. The poorest region continues to be Salamat in Chad, followed by Est in Burkina Faso and Hadjer Iamis in Chad. The region with the highest percentage of MPI poor people is Warap, in South Sudan, where 99% of its inhabitants are considered multidimensionally poor. The least poor sub-national regions include Grand Casablanca in Morocco and New Valley in Egypt, with less than 1% of the population living in multidimensional poverty. Results broken down by rural and urban areas are available in 45 countries, and 84% of MPI poor people live in rural areas.

### The highest pockets of poverty occur in the Sahel and Sudanian Savanna belt

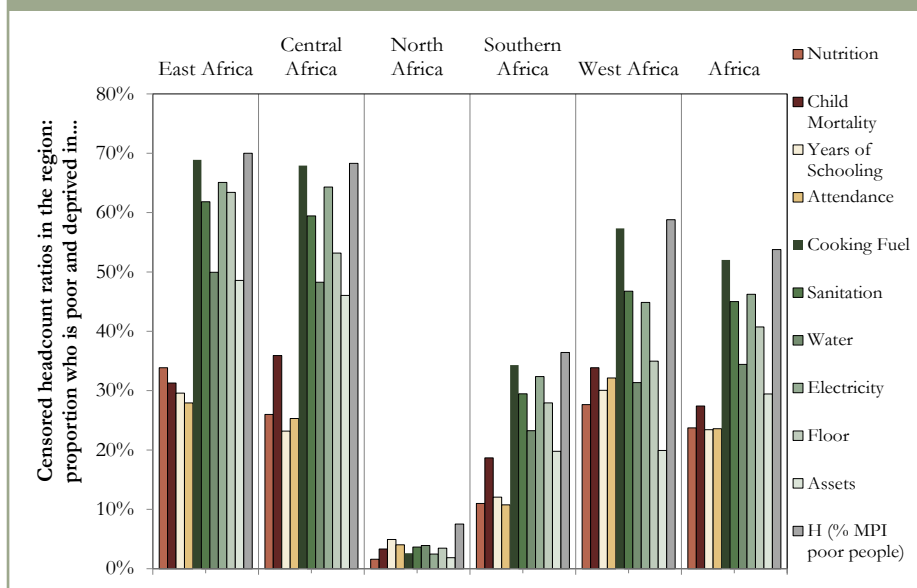
The Sahelian and Sudanian Savanna Belt of Africa is the transition zone south to the Sahara Desert, extending from the Atlantic Ocean to the Red Sea across Senegal, Mauritania, Mali, the Upper Volta, Niger, Chad, and Sudan and Ethiopia. It is sparsely populated and has suffered from recurrent droughts since the 1960s (Sen, 1983), the latest recorded in 2010. In the map on the final page of this briefing it is plainly visible that the Sahel and Sudanian Savanna contains most of the world’s poorest regions - as darker red indicates higher level of

poverty - showing the interaction between poverty and harsh environmental conditions. Yet there are notable exceptions: some sub-national regions of Sudan, Senegal, Mauritania and Chad have much lower poverty than neighbouring areas.

**Poverty has different faces in different parts of Africa**

Figure 1 shows the percentage of people who are MPI poor and deprived in different indicators within Africa's regions. Deprivations in living standards (green) tend to be highest in East and Central Africa; in West Africa the prevalence of child mortality (dark red), the lack of years of schooling and low school attendance (yellow) is considerable. This analysis shows the different challenges that different regions of Africa face in eradicating poverty.

**Fig. 1. Levels of deprivation in the population from MPI poor persons**



**What it means**

Poverty is very different depending on where in Africa we look.

East Africa has greater challenges in living standards such as cooking fuel, electricity, floor and sanitation. In West Africa child mortality and poor educational performance are significant challenges.

In terms of policy responses this means some areas need greater attention to living standards, whereas others require more action on health and education. Still, all MPI indicators are relevant and require attention in the poorer regions.

**Case study: Rosaline, Far North Region, Cameroon (within Sahel)**



Fifty-five year old Rosaline is bent low to the ground, working with several other members of her family. She, along with her husband, co-wives, and their eleven children, farm millet and other cereals on their subsistence-level farm in the Far North Region of Cameroon near the border of Chad.

Each morning Rosaline leaves her mud-brick home to draw water from a nearby public tap, a recent addition that was funded by international aid. Although her family now has access to an improved water source for drinking and washing, they have no toilet and must use the bush – as must their neighbours. The household also lacks electricity. After working in the fields, Rosaline then looks after the children and gets those who attend ready for school. Not all of the family's school-age children are in school. Some remain at home and work. Rosaline must also collect fuel – wood, crop waste, and dung – for cooking.

Rosaline notes that there have been some positive changes recently to her village, including the new water tap, as well as corn milling machines. They also have access to more markets. Still, their farming requires enormous inputs of labour for small returns. It takes seven people to harvest a bowl of peanuts. Yet despite the material stresses, the ambience around her is more playful and light than one might imagine. Rosaline is deprived in 38.8% of dimensions so is MPI poor



Bouba Housseini

**ABOUT THE GLOBAL MPI**

The Global MPI looks at poverty through a ‘high-resolution’ lens. It directly measures the nature and magnitude of overlapping deprivations in health, education and living standard at the household level. In this way, the MPI provides vital information on who is poor and how they are poor, enabling policymakers to design policies and assign resources more effectively.

The Global MPI complements the \$1.90/day measures because the poverty indicators it uses are directly comparable across populations, without the need for exchange rates. It can be broken down by social group and sub-national regions to reveal poverty patterns within and across countries, and can also be used to track changes in poverty over time.

The Global MPI was developed in 2010 by the Oxford Poverty and Human Development Initiative (OPHI) and the United Nations Development Programme (UNDP) for their flagship Human Development Reports (Alkire and Santos 2014, UNDP 2010). OPHI have updated the figures and analysis using newly released data for each Human Development Report since then.<sup>4</sup>

**INSIDE THE MPI:THREE DIMENSIONS, TEN INDICATORS**

The MPI has three equally-weighted dimensions and 10 indicators. Each person’s deprivation profile across these 10 indicators is considered.

**Who is poor?** A person is identified as **multidimensionally poor** (or ‘MPI poor’) if they are deprived in **at least one third** of the weighted MPI indicators set out in the table below.

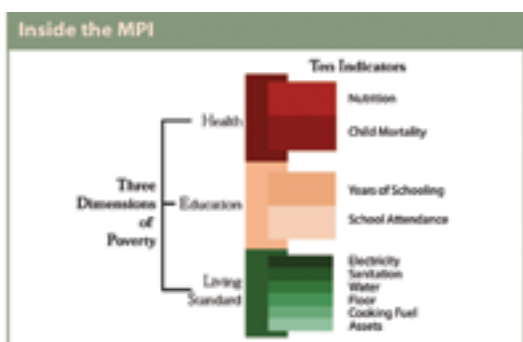
**CONSTRUCTING THE GLOBAL MPI**

The Global MPI was created using a method developed by Sabina Alkire and James Foster which builds on intuitive yet rigorous ways of using people’s deprivation profiles. The **Alkire Foster** methodology is flexible and can be used with different dimensions, indicators, weights and cut-offs to create measures specific to different societies and situations.

**The MPI is the product of two components:**

- 1) **Incidence:** the percentage of people who are poor, or the headcount ratio (**H**)
- 2) **Intensity:** the average share of dimensions in which poor people are deprived (**A**)

So: **MPI = H x A**



**Data and surveys**

The global MPIs in Africa are based on 31 DHS surveys, 12 MICS data, 2 PAPFAM and a national survey from South Africa (NIDS). For 15 of the countries, the surveys were fielded in 2013-2014; in nine countries it was 2012, for six it was 2011, and nine in 2010. Only 15% of the countries have data from years before 2010. Sub-national data are available for 41 countries.

**Table 1. The dimensions, indicators, deprivation thresholds and weights of the MPI**

Dimension	Indicator	Deprived if...	Relative Weight
Education	Years of Schooling	No household member aged 10 or older has completed five years of schooling.	1/6
	Child School Attendance	Any school-aged child is not attending school up to the age at which they would complete class 8.	1/6
Health	Child Mortality	Any child has died in the household within the last five years.	1/6
	Nutrition	Any adult or child for whom there is nutritional information is malnourished.	1/6
Living Standard	Electricity	The household has no electricity.	1/18
	Improved Sanitation	The household’s sanitation facility is not improved (according to the Millennium Development Goals (MDGs)), or it is improved but shared with other households.	1/18
	Safe Drinking Water	The household does not have access to safe drinking water (according to MDG guidelines) or safe drinking water is a 30-minute walk or more from home, roundtrip.	1/18
	Flooring	The household has a dirt, sand or dung floor.	1/18
	Cooking Fuel	The household cooks with dung, wood or charcoal.	1/18
	Assets	The household does not own more than one radio, TV, telephone, bike, motorbike or refrigerator and does not own a car or truck.	1/18

## HOW SUB-SAHARAN AFRICA REDUCED THE MPI

How has poverty changed in Africa? To study this, we use data for 35 poorest countries in Sub-Saharan Africa. These countries are home to almost all of the poor people in the countries for which we have MPI data (97% of the population and 96% of the poor people).<sup>5</sup>

Fully 30 countries had statistically significant reductions in the MPI.<sup>6</sup>

### Rwanda is the star performer

The leader in poverty reduction was Rwanda (2005-2010). Rwanda not only reduced MPI poverty the fastest of any single country, it also had significant reductions in every indicator. It also reduced the MPI in every sub-national region, and reduced the number of poor people. Furthermore, four of its five regions reduced every MPI indicator, making it a stellar performer in many ways. Rwanda's income poverty reduction, economic growth and exemplary achievement of MDGs is well known.

### Other leading poverty reducers

After Rwanda, the fastest reductions in the MPI were achieved by Ghana, followed by Liberia, Comoros and the DRC.

**Every MPI indicator** was significantly reduced in Burkina Faso, Comoros, Gabon, Mozambique, and Rwanda, showing the impact of multi-sectoral actions.

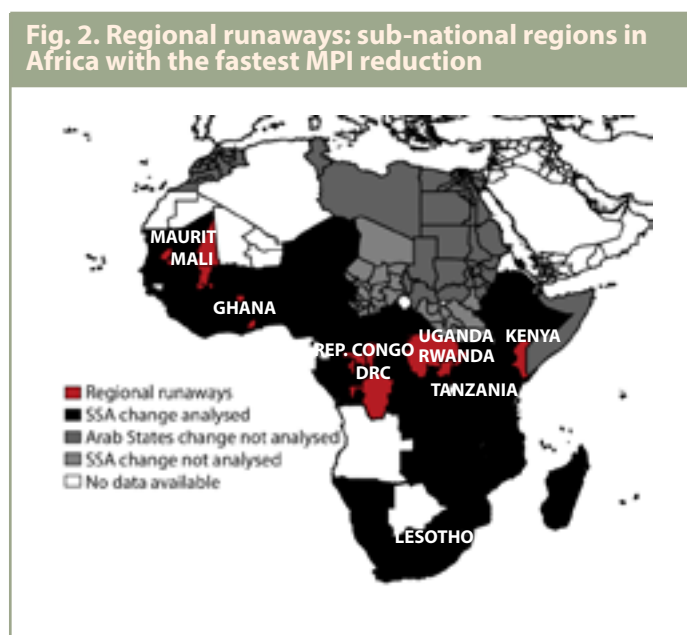
**Every sub-national region** in Gabon, Ghana, Gambia, Liberia, Mozambique, Malawi, Niger, and Rwanda reduced poverty significantly, showing equitable progress.

Rank	Region	Country
1	Likouala	The Republic of the Congo
2	Sangha	The Republic of the Congo
3	Cuvette-Ouest	The Republic of the Congo
4	Nord-Kivu	Democratic Republic of the Congo (DRC)
5	Pool	The Republic of the Congo
6	Hodh Charghy	Mauritania
7	Orientale	Democratic Republic of the Congo (DRC)
8	Gorgol	Mauritania
9	Upper-West	Ghana
10	North-Eastern	Kenya
11	Western	Uganda
12	Brakna	Mauritania
13	Bandundu	Democratic Republic of the Congo (DRC)
14	Koulikoro	Mali
15	Eastern	Ghana
16	Zanzibar	Tanzania
17	North	Rwanda
18	Oacha's-Nek	Lesotho
19	South	Rwanda

### Runaway regional success stories

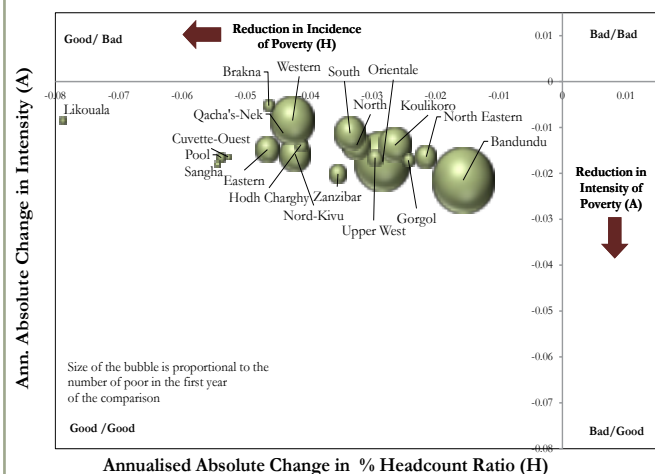
While Rwanda was truly a high performer, a number of sub-national regions in Africa reduced the MPI even faster. We call these creative high performers the 'runaway regions' because they are small areas that did great things. The list in Table 2 above includes their ranking in terms of poverty reduction.

Across these cases of success, the regional runaways used different pathways to reduce multidimensional poverty. Likouala, Republic of Congo (the best performer), reduced MPI poverty by greatly reducing the share of people living in multidimensional poverty. Likouala has also been one of the regions championed by its significant investment in infrastructure that addresses access to electricity, water, transport and communications. In contrast, Bandundu in the DRC, achieved its impressive results by reducing the intensity of poverty among the poorest of the poor more than reducing the share of poor people. Bandundu is part of the Great Lakes Initiative for developing the region. Bandundu is also home to a larger number of poor people than Likouala, as the size of the bubble in the Figure 3 shows.



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by OPHI or the University of Oxford. This map is intended for illustrative purposes only.

Fig. 3. Change in incidence and intensity of MPI



**What it means**

Countries exhibit different patterns of poverty reductions. Being further to the left of the graph implies higher reduction in the incidence of poverty while being further at the bottom implies higher reduction in the intensity of poverty.

Likouala reduced poverty by significantly reducing the incidence of poverty from 74% to 54% in the time between 2009 and 2011/12. However, it did not significantly reduce the share of deprivations the poor people experience.

Bandundu, further to the right, shows a lower annualised reduction in the incidence of poverty but at the same time being closer to the bottom of the graph indicates the region had a higher reduction in the average share of deprivations the poor people experience. Indeed Bandundu showed significant reductions in both incidence and intensity of poverty.

**The number of poor people is not reducing as fast as poverty rates**

A sobering observation, however, is that of the 30 countries that saw statistically significant reductions in the level of MPI, only 12 also reduced the number of poor people. In 18 countries, population growth led to a rise in the number of poor people, even though the level of poverty fell. Indeed, even the top 'regional runaway' Likouala saw an increase in the number of poor people.

**Monetary and multidimensional poverty compared**

Comparisons of levels and changes of monetary and multidimensional poverty reveal a fascinating and intricate story. Overall Africa has fewer income poor people than MPI poor people. 544 million people are MPI poor in Africa, whereas there are 388 million poor people according to the \$1.90/day measures.

The differences between the proportion of \$1.90 and MPI poor people are greatest in East and West Africa.<sup>7</sup> By the \$1.90/day poverty line, 48% in West Africa and 33% in East Africa are poor, whereas by the MPI, 70% of people in East Africa are MPI poor and 59% in West Africa. The MPI reveals a hidden face of poverty that may be overlooked if we consider only its income aspects.

Globally, of the ten countries with the largest disparities between the percentage of people who are MPI poor and poor according to \$1.90/day estimates, eight are in Africa.<sup>8</sup>

**Table 3. Largest disparities between the percentage of people who are poor according to MPI and \$1.90 / day**

	Percentage of poor people according to the MPI (H)	Percentage of poor people according to \$1.90 /day (closest year to MPI survey year)	Percentage difference
Ethiopia (2011)	87%	34%	54%
Chad (2010)	87%	38%	49%
Sudan (2010)	58%	15%	43%
Mauritania (2011)	52%	11%	41%
Guinea (2012)	75%	35%	40%
Niger (2012)	89%	50%	39%
Uganda (2011)	70%	33%	37%
Cote d'Ivoire (2012)	59%	29%	30%

**What it means**

The gap between multidimensional poverty and income poverty in some countries is startling.

In places such as Ethiopia, Chad and Sudan income poverty data according to \$1.90/day estimates do not provide an accurate indication of deprivations in health, education and living standards.

But as ever, patterns vary in interesting ways. Nine of the 25 countries where the percentage MPI poor is below the percentage of \$1.90/day poor are in Africa. These countries are Lesotho, Swaziland, Malawi, Madagascar, Zambia, South Africa, Togo, Democratic Republic of the Congo, and Tunisia.

Moreover, national averages may hide important inequalities at the sub-national level. Take Nigeria, the 16th poorest country according to \$1.90/day. While the percentage of people who are MPI and income poor is the same (53%) poverty in Northern states of Nigeria is much higher. For example, in the North of Nigeria 72% of people are MPI poor. In contrast, in the South and in FCT-Abuja only 24% of people are MPI poor. It is not presently possible to disaggregate \$1.90/day poverty rates by sub-national regions.

The number of people in multidimensional poverty in East Africa outnumbers those suffering similar conditions in West Africa. However, the proportion of people under income poverty is lower in East Africa than in West Africa.

Moving to changes over time, we also see rather divergent patterns. Figure 6 shows the changes in the incidence of MPI and \$1.90 poverty for matching time periods.<sup>9</sup>

The data show marked differences between the changes in income poverty and multidimensional poverty. All pictured changes of MPI are statistically significant. For the five best performing countries in terms of MPI reduction we find that only Mauritania reduced \$1.90/day poverty at the same pace; the rest had slower reductions of monetary poverty. For Ghana we find much higher reductions in multidimensional poverty, while for three out of the five best performing countries - Rwanda, The Republic of the Congo and Liberia - our data even suggest opposite stories, reductions in multidimensional poverty but an increase in income poverty.

Fig. 4. Percentage of poor people by regions in Africa

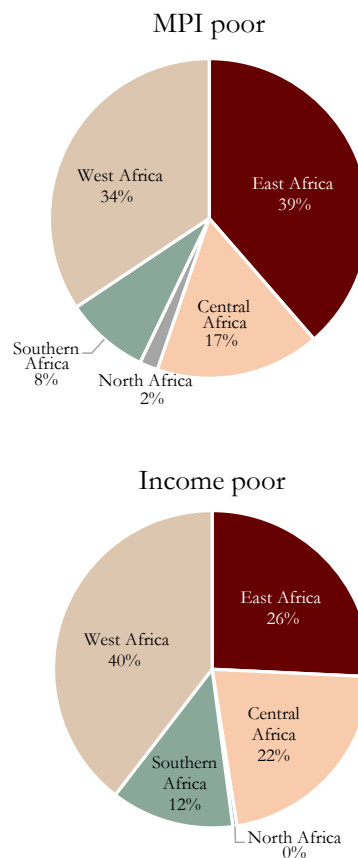


Fig. 5. Comparing the percentage of people who are MPI poor and \$1.90/day poor

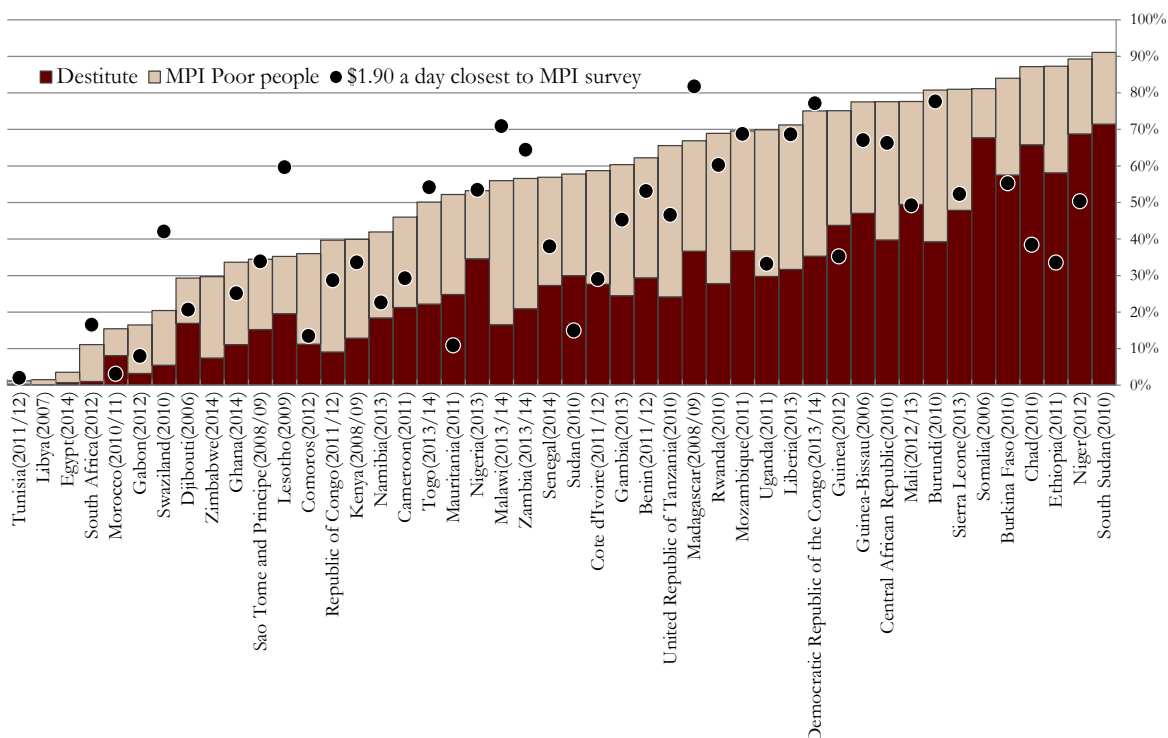
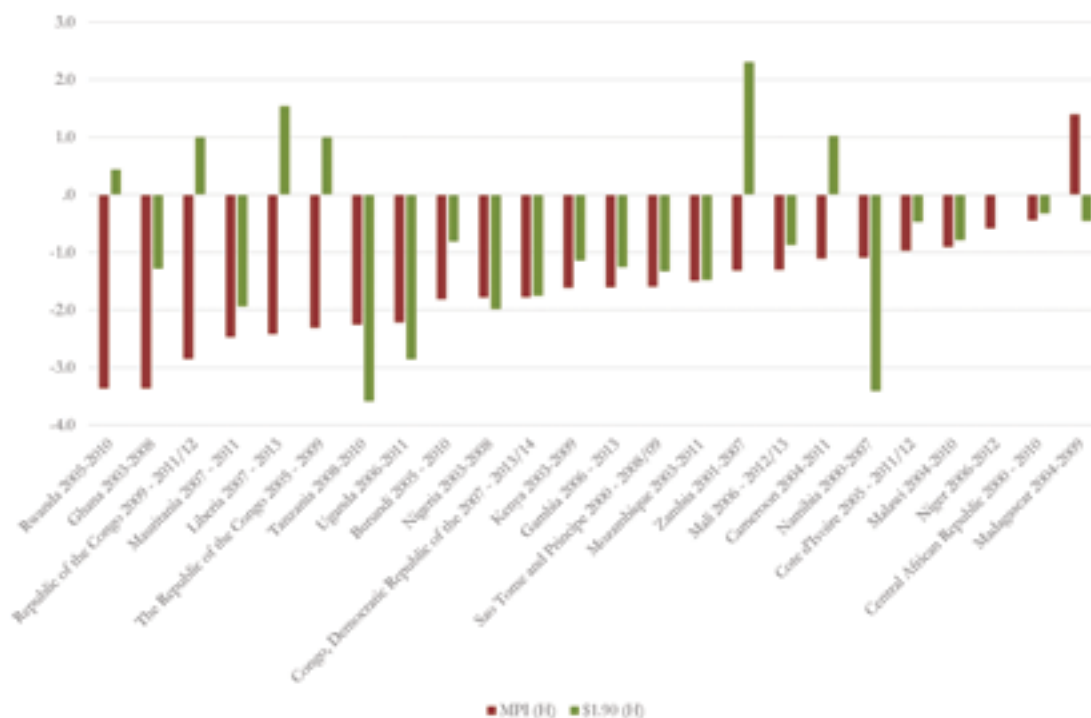


Fig. 6. Annualised percentage absolute changes in MPI and \$1.90/day poverty



## KEY FINDINGS FROM THE GLOBAL MPI 2016

To put the results in Africa in perspective, we share key global MPI 2016 findings for 102 countries.

- A total of **1.6 billion people** are living in **multidimensional poverty**; about 30% of people in the countries analysed.
- There are **50% more MPI poor people** in the countries analysed than there are **income poor people using the \$1.90/day** poverty line.
- Almost one third of MPI poor people live in Sub-Saharan Africa (32%); 53% in South Asia, and 9% in East Asia.
- Three quarters of MPI poor people live in **Middle Income Countries**.
- Nearly half of all MPI poor people are **destitute** – 768 million – and 91% of destitute people live in South Asia and Sub-Saharan Africa.
- In 2016 we use internationally comparable survey data from **102 countries** covering **75% of the world's population**.<sup>10</sup> **Disaggregated analysis** of the MPI is available for most **rural-urban areas** and for **962 sub-national regions**, the poorest of which is Salamat, in Chad.

## NOTES

1. Angola is not included as its MPI data are older than 2005. Other African countries for which we have not found comparable data on MPI indicators are Algeria, Botswana, Cape Verde, Eritrea, Equatorial Guinea, and Seychelles.
2. All figures use 2012 population data unless otherwise noted. The countries include 7 Arab states (Djibouti, Egypt, Libya, Morocco, Somalia, Sudan and Tunisia) and 39 Sub-Saharan African countries (Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Comoros, Democratic Republic of the Congo (DRC), Republic of Congo, Cote d'Ivoire, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, South Africa, South Sudan, Swaziland, United Republic of Tanzania, Togo, Uganda, Zambia and Zimbabwe).
3. The definitions of the regions follow the African Development Bank categorisation (ADB, 2016).
4. Alkire and Robles 2015; for earlier methodological notes please see [www.ophi.org.uk/multidimensional-poverty-index/mpi-2015/mpi-methodology/](http://www.ophi.org.uk/multidimensional-poverty-index/mpi-2015/mpi-methodology/).
5. Four countries did not have comparable data for two points in time. To create rigorous comparisons, we strictly harmonise variable definitions, and compare annualised rates of change. Survey periods are 5-7 years apart for 25 comparisons, and for 7 comparisons survey periods are 2 to 4 or 8 to 12 years apart.
6. All reported results for statistical tests are based on two-tailed tests using  $\alpha=5\%$ . If two periods are reported, significance refers to the combined or total time period.
7. Only 10% of poor people live in Southern and North Africa.
8. The non-African countries with high disparity are Uzbekistan and Pakistan.
9. Details of how \$1.90/day were treated to create matching periods are set out in Alkire Roche and Vaz 2015.
10. Using figures from 2012.

## REFERENCES

African Development Bank Group (2016) "Countries" [available at [www.afdb.org/en/countries/](http://www.afdb.org/en/countries/) accessed on 13 May 2016].

Alkire, S., Conconi, A., and Seth, S. (2014). 'Measuring destitution in developing countries: An ordinal approach for identifying linked subset of multidimensionally poor.' *OPHI Research in Progress 42a*. University of Oxford.

Alkire, S., Jindra, C., Robles, G., Vaz, A. (2016) "Multidimensional Poverty Index 2016: Brief methodological note and results." *OPHI Briefing 42*, University of Oxford

Alkire, S. and Foster, J. (2011). "Counting and multidimensional poverty measurement." *Journal of Public Economics*, 95(7-8), 476-487.

Alkire, S. and Robles, G. (2015). "Multidimensional Poverty Index - Summer 2015: Brief methodological note and results," University of Oxford.

Alkire, S., Roche, J. M., and Vaz, A. (2014). 'Multidimensional poverty dynamics: Methodology and results for 34 countries.' *OPHI Research in Progress 41a*, University of Oxford.

Alkire, S. and Santos, M. E. (2014). "Measuring acute poverty in the developing world: Robustness and scope of the Multidimensional Poverty Index." *World Development*, 59: 251-274.

Sen, A. (1983) *Poverty and Famines: An Essay on Entitlement and Deprivation*. Oxford University Press, ch. 8.

### Online Resources

OPHI's Interactive Databank enables you to study how over 100 developing countries perform in terms of multidimensional poverty. Interactive graphs reveal where and in which indicators people are poor and destitute, and show how MPI values compare with complementary data, such as \$1.90/day poverty. You can also download individual country briefings illustrated with graphs, maps and charts as well as data tables and full methodological details.

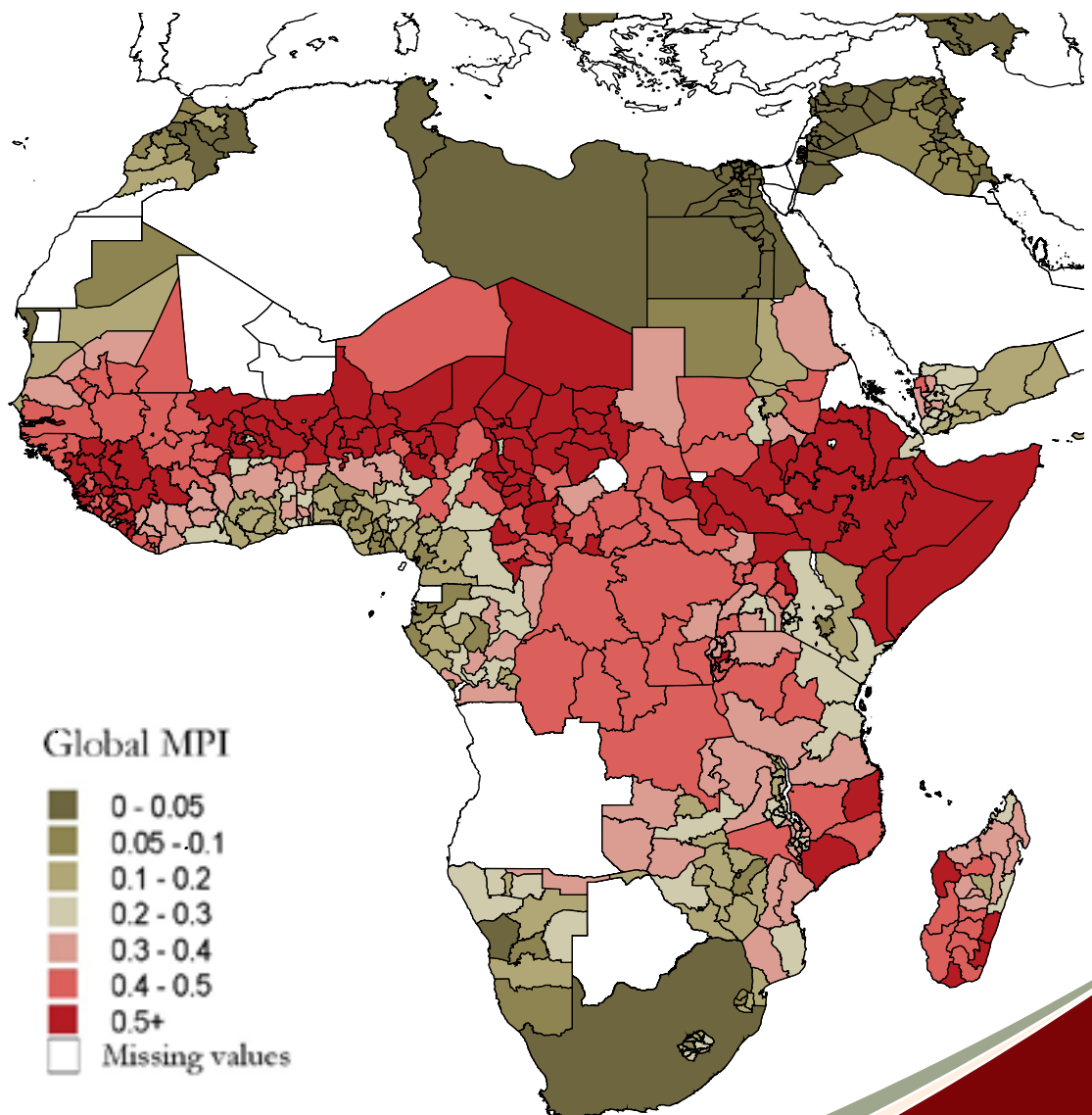
See [www.ophi.org.uk/multidimensional-poverty-index](http://www.ophi.org.uk/multidimensional-poverty-index).

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